Trained Electricians are in Demand!

Electricians are the aristocrats of the construction industry. Electricians earn one of the top hourly wage rates in the industry. They are affected less by the seasonal nature of most building trades so annual earnings also tend to be higher. When weather conditions are unfavorable, often jobs can be found in factories as well as private and public institutions. Some states require electricians to be licensed by passing a journeyman's examination. It takes a great deal of time and study, but the rewards are many. If you are looking for a career with a future, start with IEC's Electrician Apprenticeship Training Program.

IEC Can Help You Get Started

The Independent Electrical Contractors Association of Greater St. Louis invites you to apply for admission to the IEC Electrician Apprenticeship Program. Students who successfully complete the class work and on-the-job training requirements graduate as a Journeyman Electrician. ***The IEC Apprenticeship Program is registered by the U.S. Department of Labor, Office of Apprenticeship to graduate Journeymen Electricians.***

Classroom Training

The IEC Apprenticeship Classroom Training is a four-year program. Apprenticeship classes meet in the evenings from August to May. Each year students receive a minimum of 160 hours of classroom and lab instruction. All classes are held at the IEC Training Center in Chesterfield.

Apprentice's receive classroom training in:

Basic Electricity & Math, Blueprint Reading, Motors & Generators, Safety, CPR & First Aid, OSHA 10-Hour, Electrical Fundamentals & Theory, NFPA70E, Transformers, Motor Controls, & the current National Electrical Code.

On The Job Training

The IEC Apprenticeship Program **does not guarantee employment**. However, we do work with our students to place them as Apprentice Electricians with IEC Contractor Member. To graduate as a Journeyman, Apprentices need a total of 8000 hours of on-the-job training in Preliminary Wiring, Residential and Commercial Wiring, Troubleshooting, and Motor Controls. During training apprentices are supervised and receive extensive instruction related to job safety.

Registration

Minimum Requirements

All applicants must be at least **18 years of age.** You must have a **high school diploma or equivalent.** Prospective students must pass an entry exam prior to registration. Passing grade for exam is 78%. If you do not pass the entry exam, you will be required to take the 12-hour math course provided by the IEC. There is an additional fee for this course.

The Registration Process

Applications are to be **completed in person** at the IEC office. Applications are accepted Monday-Thursday, 9:00 a.m. - 4:00 p.m by appointment only. Applicants need to provide the following:

- **State issued Picture ID**
- **High School or College transcripts**
- **A non-refundable $100.00 tuition deposit**

A Publication of the
Independent Electrical Contractors
of Greater St. Louis
668 Goddard Ave.
Chesterfield MO 63005

BRIGHTEN YOUR FUTURE!

Acceptance into the Program

To be accepted into the program, you must complete the outlined application process. Upon passing the entry exam and completing the application process, you will be placed in the IEC Available Apprentice List which is made available to all IEC contractor members.

All fees are due prior to starting school!

Advanced Placement

Advanced placement into the second year is available through the IEC Advanced Placement Exam. Students must request the exam at the time of application. *There is an additional fee for this exam.*

Affirmative Action

The recruitment, selection, employment, and training of apprentices during their apprenticeship shall be without discrimination because of age, race, color, religion, national origin or sex. IEC will provide equal opportunity in the apprenticeship program as required under Title 29 of the Code of Federal Regulations.

The IEC is now accepting applications for the 2020-2021 school year.

ENROLLMENT IS ON A
FIRST COME FIRST SERVE BASIS
SPACE IS LIMITED

CALL THE IEC AT 636-536-9701.
FOR FURTHER DETAILS CONTACT
Jessica Garnett at training@iecstl.com

What is I.E.C.?

The Independent Electrical Contractors is an Association comprised of hundreds of Independent Electrical Contractors and their thousands of Employees across the United States. IEC, in its current form, was officially founded in 1958. Several cities and states have similar Associations that are solely dedicated to the concerns of **Independent Electrical Contractors** and their employees.

The Independent Electrical Contractors is a voluntary association. IEC is headquartered in Arlington, Virginia, and administered by a full-time staff. The Association's leadership is elected by Contractor Members. This includes a Board of Directors and appropriate committees to address the main concerns of the Association.

Contractors and their Employees benefit from IEC membership in several ways:

- A nationwide network of fellow Independent Contractors
- A Registered Apprenticeship Training Program, Safety Programs, resources and materials
- Legislative information and action that protects independent and small business issues
- Seminars and upgrade education for Electricians and Management
- Annual convention and exposition to keep pace with industry changes
- Publications that highlight important issues

The majority **(85%)** of all Electrical Contractors nation-wide are independent contractors. Independent contractors are responsible for over three-fourths of all electrical contracting work performed in the United States. The work includes: Commercial, Residential, Industrial, Communications, Institutional Construction, and maintenance. As an employee of an Independent Electrical Contractor, you are joining thousands of others who are dedicated to providing the highest quality of workforce and craftsmanship in the country.

Independent Electrical Contractors
of Greater St. Louis
668 Goddard Ave,
Chesterfield MO 63005.

I E C

ST. LOUIS

Independent Electrical Contractors, Inc.

Electrical Apprenticeship Program

Sponsored By
The Independent Electrical Contractors of Greater St. Louis

Approved By
The U.S. Department of Labor Office of Apprenticeship

REGISTERED APPRENTICESHIP
Earn. Learn. Succeed.

FOURTH YEAR

First Semester

401—Energized Electrical Work Relative to NFPA 70E
402—Power Distribution Systems & Phase-Loss Monitors
403—Solid– Slate Relays and Phase-Loss Lab
404—Timing Relays: On– Delay, Interval & Recycle
405—Timing Relays: Practical Application Lab (PLA) & Interval Timers (Stop Light)
406—Timing Relays: Off– Delay, One-Shot & Multifunction
407—Timing Relays: Practical Application of Off- delay, One Shot & Multifunction Timers
408—Counters and Sensors
409—Mid Term Review and Exam
410—Motor Starting Methods
411—Motor Drives– Accelerating & Decelerating Methods
412—Introduction to Programmable Controllers
413—Advanced Lab– Automatic Car Wash
414—Energy Management & Building Automation Including Latching Relays
415—Fire Suppression Systems & Advanced Lab
416—Preventive Maintenance & Troubleshooting

Second Semester

417—First Semester Exam Review
418—First Semester Final Exam
419—Introduction, Definitions & Boxes
420—Cables & Underground Installations
421—Raceways and Conductors
422—Dwelling Units: General Provisions
423—Dwelling Units: Specific Provisions
424—Services: Equipment, Working Space, Grounding & Bonding
425—Commercial Installations
426—Hazardous & Health Care Facilities
427—Mid–Term Review and Exam
428—Miscellaneous Occupancies & Special Equipment
429—Industrial Services, Transformers & Feeder Taps
430—Motor & Power quality
431—Services & Load Calculations
432—BCES Application
433—Fire Alarm Systems– Introduction & Overview
434—Voice/Data/Video– Introduction & Overview
435—Final Exam Review
436—Second Semester Final Exam

Training Tomorrow's Electricians Today!

For more information on IEC's Electrical Apprenticeship Program

Contact:
Jessica Garnett
668 Goddard Ave
Chesterfield, MO 63005
Phone: 636-536-9701
Email: Training@iecstl.com

Independent Electrical Contractors, Inc.

2020—2021 Curriculum Guide

Independent Electrical Contractors
Of Greater St. Louis
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Website: www.iecstl.com
Phone: 636-536-9701

Registered Apprenticeship
Earn. Learn. Succeed.

FIRST YEAR

First Semester

101– Orientation and Basic Principles
102– Tools, Fasteners and Knots
103– Intro to safety, Navigating the NEC & EWR
104– Intro to Electric Charges & Basic Math
105– Applied Math, Circuit Theory, Plans & Specs
106– Applied Math, Ohm's Law, Symbols & Boxes
107– Conduit Bending
108– Dwelling Circuits, Outlets & General lighting
109– Conductor Types, Ampacity & Overcurrent
110– Voltage Drop, Cable, Conduit and Tubing
111– Mid-Term Review and Exam
112– Conductors, switches & Receptacles
113- GFCI, AFCI & Receptacles
114– Luminaires, Ballasts & Lamps
115– Box Fill & Intro to series circuits
116– Box Size and series Circuits
117- Lighting & Small Appliance Circuits
118- First Semester Final Exam

Second Semester

119– Track Lighting, Dimmers & parallel Circuits
120– Laundry & Bathroom Receptacles Circuits
121– Garage Door & Underground installations
122– Appliance & Special purpose Outlets
123– Kitchen Appliances & Grounding conductors
124– Bathrooms, Exhaust Fans & Tubs
125- Heating and Air Conditioning
126– Residential Limited Energy Systems
127– Mid-Term Review and Exam
128– Multiwire Branch Circuits & Combination
129– Combination Circuits, Conductors workshop
130– Services, Equipment, cost of Electrical Power
131– Grounding & Bonding, Special Tools
132– Overcurrent protection & circuit conditions
133– Service Entrance Calculations
134– Swimming Pools, Spas and Hot Tubs
135– Home automation, Standby Power
136- Second Semester Final Exam

SECOND YEAR

First Semester

201– NEC scope, Definitions & Voltage Systems
202– Services Calculations & Class 1 Installations
203– Services & Class 2 Installations
204– Conductor & Overcurrent Protection
205– Grounding Terms & Commercial Installations
206– Grounding Electrode System
207– Ohm's Law review & Bulk Storage Facilities
208– Conduit Fill, Box Fill & Pull Box sizing
209– First Semester Mid Term review & Exam
210– Switches, Panelboards & Health Care Facility
211– Flexible Cord, Luminaries & Appliances
212– Intro to AC Theory & Places of Assembly
213– AC Theory: Miscellaneous Buildings
214– AC Theory: Temporary Installations
215- Single-Phase Transformers & Single voltages
216– Single Phase Transformers, Code Calculations
217– First Semester Exam Review
218– First Semester Exam

Second Semester

219– Three Phase Power & Three Phase Ohms Law
220– 3-phase Transformers-Delta-Delta
221– 3-phase Transformers-Delta-Wye
222– Non-Linear Loads 3-phase Fault Current
223– Transformers NEC Requirements
224– Buck-Boost Transformers: Single & 3 Phase
225– Calculations & Selection
226– Generator, Transfer switches & Emergency sys
227– Second Semester Mid Term Review & Exam
228– Electric Motors: DC & AC Single Phase
229– Electric Motors: Polyphase
230– Motors: Sizing Branch Circuit
231– Motor: Branch Circuit Overcurrent protective Devices: Short Circuit & Ground Fault Protect
232– Motor: Branch Circuit Grounding Conductors, Overload Protection, Disconnects & Starters
233- Locked Rotor Current and Phase loss for Motor A/C refrig– Equip, Generators & Fire Pumps
234– Motor feeder conductors, OCPD's & Tap Conductors
235– Second Semester Exam Review
236– Second Semester Final Exam

THIRD YEAR

First Semester

301– Practical Guide to OSHA & NFPA 70 E
302– Intro to Grounding & Bounding
303– General requirements for Grounding & Bonding
304- System Grounding I
305– System Ground II
306– Grounding Electrode System & Grounding Electrode Conductor
307– Enclosure, Raceway & Service Cable Connections Bonding
308– Equipment Grounding & Grounding Conductors
309– Methods of Equipment Grounding & Grounding of Specific Equipment
310– First Semester Mid Term Exam
311– Print reading: Project Design, Development & specifications
312– Print reading: Survey, Civil. & Structural Drawings
313– Print reading: Architectural Drawings I
314– Print reading: Architectural Drawings II
315– Print reading: MEP, M, E, P & Special Prints
316– Project Planning: Foreman Training
317– First Semester Exam Review
318– First Semester Exam

Second Semester

319– Electrical Quantities, Circuits & Safety
320– Manual Control Circuits: Devices & Diagrams
321– Introduction to contactors & relays
322– Practical Lab Application (PLA): using contactors & relays
323– Manual and Automatic control devices
324– Ladder Diagrams using manual & automatic control devices
325– PLA: Automatic Controls
326– Magnetic Motor Starters
327-PLA: Pilot Devices &Holding contacts
328– Mid Term review and Exam
329– Motor overload protection & Connections
330– PLA: Magnetic Motor Starters
331– Reversing Motor Controllers, Starters & Motor Connections
332– PLA: Reversing Motor Starters
333– Latching & Altering Relays and Jogging
334– PL: Multi Motor Equipment
335– Second Semester Final Exam Review
336– Second Semester Final Exam